pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NORTHWEST REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0002666**
Facility Type	**IW**	APS ID	**552978**
Major / Minor	**Major**	Authorization ID	**1012228**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Sonneborn, Inc.**	Facility Name	**Sonneborn**
Applicant Address	100 Sonneborn Lane	Facility Address	100 Sonneborn Lane
	Petrolia, PA 16050-0350		Petrolia, PA 16050
Applicant Contact	Richard E.Fleeger	Facility Contact	
Applicant Phone	(724) 756-9300	Facility Phone	
Client ID	240973	Site ID	2755
SIC Code	2999	Municipality	Fairview Township
SIC Description	Manufacturing - Petroleum And Coal Products, Nec	County	Butler
Date Application Received	January 31, 2014	EPA Waived?	No
Date Application Accepted	February 10, 2014	If No, Reason	Major Facility
Purpose of Application	Renewal of an NPDES Permit for existing discharges of industrial wastewater and stormwater.		

Summary of Review

The facility is registered to use eDMR for reporting.

The permittee has requested a continuation of the 316(a) Thermal Variance during the renewed permit term. The basis for this request is that operating conditions have not changed since the thermal variance study was conducted, no change to other discharges that would add a thermal load, and no expectation that the biotic community has changed since the thermal variance was granted. Attached to this fact sheet is an email from Heidi Biggs, 316(a) coordinator out of central office, verifying what is required at this time to seek continuation of the variance.

Stormwater Outfalls 001 and 002 were determined in the previous permit renewal to receive stormwater not associated with industrial activity, and therefore do not have any monitoring requirements in the NPDES Permit.

Approve	Return	Deny	Signatures	Date
X			Adam J. Pesek, E.I.T. / Environmental Engineering Specialist Draft Final	
X			David G. Balog, P.E. / Environmental Engineer Manager Draft Final	
X			John A. Holden, P.E. / Regional Program Manager	

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	010	Design Flow (MGD)	0.479
Latitude	41° 0’ 35.05”	Longitude	79° 43’ 2.68”
Quad Name	Parker	Quad Code	1008
Wastewater Description:	Specialty white oil, petroleum sulfonate (barium sulfonate conversion, calcium sulfonate conversion), wax and petroleum manufacturing, leachate, laboratory waste, sanitary waste, boiler blowdown, and stormwater		
Receiving Waters	South Branch Bear Creek	Stream Code	49141
NHD Com ID	123851397	RMI	3.52
Drainage Area	6.28	Yield (cfs/mi^2)	0.0444
Q_{7-10} Flow (cfs)	0.279	Q_{7-10} Basis	USGS# 03029400
Elevation (ft)	1180.5	Slope (ft/ft)	0.00553
Watershed No.	17-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Metals		
Source(s) of Impairment	Abandoned Mine Drainage		
TMDL Status	Active	Name	SBBC AMD Watershed TMDL 4/07/2007
Background/Ambient Data		Data Source	
pH (SU)	7.4	Sonneborn Thermal Variance Report (April 2011)	
Temperature (°F)	Varies	Sonneborn Thermal Variance Report (April 2011)	
Hardness (mg/L)	202	WQN# 929	
Other:			
Nearest Downstream Public Water Supply Intake		PA American Water Company @ East Brady	
PWS Waters	Alleghany River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	20

Changes Since Last Permit Issuance:

Other Comments: RQ values are derived from Toms Run flow data

Treatment Facility Summary

Treatment Facility Name: Sonneborn Inc. - Petrolia Plant

WQM Permit No.	Issuance Date
1087202	
1069205	
1084203	

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Residual Waste / Biosolids	Biological (Industrial Waste)	Activated Sludge	Ultraviolet Radiation	0.479

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
___		___		Onside landfill

Changes Since Last Permit Issuance:

Other Comments:

Compliance History

DMR Data for Outfall 003 (from July 1, 2013 to June 30, 2014)

Parameter	Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14
No discharge in past year.												

DMR Data for Outfall 007 (from July 1, 2013 to June 30, 2014)

Parameter	Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14
Flow (MGD) Average Monthly	.026						.03					
pH (S.U.) Average Monthly	7.45						7.18					
CBOD5 (mg/L) Average Monthly	8.40						1.0					
TSS (mg/L) Average Monthly	8.0						3.0					
Oil and Grease (mg/L) Average Monthly	3.50						4.3					
Total Aluminum (mg/L) Average Monthly	0.05						0.21					
Total Barium (mg/L) Average Monthly	2.33						0.31					
Total Iron (mg/L) Average Monthly	1.58						1.82					
Total Manganese (mg/L) Average Monthly	1.36						0.92					

DMR Data for Outfall 010 (from July 1, 2013 to June 30, 2014)

Parameter	Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14
Flow (MGD) Average Monthly	0.517	.490	.227	.341	0.44	0.39	0.397	0.278	0.311	0.347	0.393	0.587

Parameter	Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14
Flow (MGD) Daily Maximum	0.585	.752	.263	.419	0.60	0.42	0.458	0.347	0.390	0.366	0.619	0.786
pH (S.U.) Maximum	8.1	8.0	8.2	8.2	8.0	8.1	8.0	8.2	8.1	8.3	8.2	8.4
pH (S.U.) Minimum	7.0	6.8	7.2	7.4	7.4	7.5	7.2	7.5	7.4	7.0	7.6	7.2
DO (mg/L) Minimum	5.8	6.3	6.9	7.4	8.0	8.0	8.0	8.7	8.9	6.3	7.2	6.4
Temperature (ºF) Daily Average	97.1	89.5				75.5	77.5	71.3	67.6			
Temperature (ºF) Day 1 thru 15 Daily Average			87.8	82.3	75.1					84.2	85.8	81.8
Temperature (ºF) Day 16 thru EoM Daily Average			81.3	74.9	75.3					92.7	79.1	89.6
CBOD5 (lbs/day) Average Monthly	7.1	4.1	1.0	24.41	14.5	3.3	3.30	6.20	2.6	2.9	3.3	4.9
CBOD5 (lbs/day) Daily Maximum	9.8	6.3	.11	58.91	32.5	3.5	3.81	13.4	3.3	3.0	5.2	6.7
CBOD5 (mg/L) Average Monthly	1.7	1.0	0.05	9.38	3.7	1.0	1.0	2.70	1.0	1.0	1.0	1.0
CBOD5 (mg/L) Daily Maximum	2.6	1.0	.05	18.7	6.5	1.0	1.0	7.9	1.0	1.0	1.0	1.0
TSS (lbs/day) Average Monthly	6.5	6.2	3.8	5.20	10.3	12.0	4.96	39.3	3.9	7.3	5.0	9.3
TSS (lbs/day) Daily Maximum	7.4	9.5	6.6	9.36	23.2	33.0	5.72	185.6	5.0	12.0	7.8	10.1
TSS (mg/L) Average Monthly	1.5	1.5	2.0	1.80	3.1	3.0	1.50	17.1	1.5	2.5	1.5	1.9
TSS (mg/L) Daily Maximum	1.5	1.5	3.0	3.0	8.0	10.0	1.50	64	1.5	4.0	1.5	3.0
Oil and Grease (lbs/day) Average Monthly	9.9	8.6	1.9	2.57	5.0	3.8	4.68	2.3	1.8	3.5	3.6	5.9
Oil and Grease (lbs/day) Daily Maximum	11.8	17.1	3.5	4.30	7.0	4.6	9.57	3.1	2.6	4.5	7.3	7.9
Oil and Grease (mg/L) Average Monthly	2.3	2.1	1.0	1.02	1.4	1.2	1.40	1.0	0.7	1.2	1.1	1.2
Oil and Grease (mg/L) Daily Maximum	3.2	2.8	1.6	1.87	2.4	1.4	2.60	1.4	0.8	1.8	1.4	1.3

Parameter	Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14
Fecal Coliform (CFU/100 ml) Geometric Mean	35	19.2	5	22.6	11.3	5	6.6	10	9	5	22	22
Ammonia (lbs/day) Average Monthly	0.27	0.25	0.1	1.24	11.2	3.10	4.93	1.4	2.24	0.23	1.0	0.68
Ammonia (lbs/day) Daily Maximum	0.49	0.46	0.1	5.67	43.2	12.0	23.22	4.0	7.0	0.45	6.2	0.94
Ammonia (mg/L) Average Monthly	0.06	0.06	0.05	0.40	2.4	0.9	1.50	0.6	0.86	0.08	0.3	0.14
Ammonia (mg/L) Daily Maximum	0.10	0.14	0.05	1.80	8.6	3.44	6.31	2.1	2.5	0.15	1.2	0.23
Total Aluminum (lbs/day) Average Monthly	0.16	.14	0.11	.10	0.25	0.17	0.15	0.09	0.17	0.15	0.26	0.15
Total Aluminum (lbs/day) Daily Maximum	0.16	.14	0.11	.10	0.25	0.17	0.15	0.09	0.17	0.15	0.26	0.15
Total Aluminum (mg/L) Average Monthly	0.05	.05	0.05	.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Aluminum (mg/L) Daily Maximum	0.05	.05	0.05	.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total Barium (lbs/day) Average Monthly	1.4	1.1	0.57	.985	0.75	0.58	0.85	0.74	0.83	1.1	0.95	1.73
Total Barium (lbs/day) Daily Maximum	1.6	1.2	0.68	1.19	1.1	0.63	1.07	1.2	0.96	1.2	1.6	2.90
Total Barium (mg/L) Average Monthly	.32	0.38	0.30	.36	0.18	0.18	0.25	0.32	0.28	0.4	0.27	0.36
Total Barium (mg/L) Daily Maximum	.33	0.44	0.40	.38	0.22	0.19	0.29	0.40	0.29	0.46	0.30	0.44
Total Iron (lbs/day) Average Monthly	0.22	.08	.09	.02	0.20	0.13	0.15	0.07	0.07	0.09	0.2	0.03
Total Iron (lbs/day) Daily Maximum	0.22	.08	.09	.02	0.20	0.13	0.15	0.07	0.07	0.09	0.2	0.03
Total Iron (mg/L) Average Monthly	0.07	.03	.04	.01	0.04	0.04	0.05	0.04	0.02	0.03	.04	0.01
Total Iron (mg/L) Daily Maximum	0.07	.03	.04	.01	0.04	0.04	0.05	0.04	0.02	0.03	.04	0.01
Total Manganese (lbs/day) Average Monthly	0.03	.03	.02	.71	2.2	0.03	0.03	2.60	0.10	0.15	2.3	0.03

Parameter	Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14
Total Manganese (lbs/day) Daily Maximum	0.03	.03	.02	.71	2.2	0.03	0.03	2.60	0.10	0.15	2.3	0.03
Total Manganese (mg/L) Average Monthly	0.01	.01	.01	.35	0.44	0.01	0.01	0.92	0.03	0.05	0.44	0.01
Total Manganese (mg/L) Daily Maximum	0.01	.01	.01	.35	0.44	0.01	0.01	0.92	0.03	0.05	0.44	0.01

DMR Data for Outfall 021 (from July 1, 2013 to June 30, 2014)

Parameter	Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14
Flow (MGD) Average Monthly	0.01						.02					
pH (S.U.) Average Monthly	7.26						7.12					
CBOD5 (mg/L) Average Monthly	4.50						4.1					
TSS (mg/L) Average Monthly	5.0						3.0					
Oil and Grease (mg/L) Average Monthly	1.50						3.8					
Total Aluminum (mg/L) Average Monthly	0.06						0.05					
Total Iron (mg/L) Average Monthly	1.18						1.22					
Total Manganese (mg/L) Average Monthly	0.66						0.68					

DMR Data for Outfall 022 (from July 1, 2013 to June 30, 2014)

Parameter	Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14
No discharge in past year.												

DMR Data for Outfall 023 (from July 1, 2013 to June 30, 2014)

Parameter	Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14
Flow (MGD) Average Monthly	0.017						.015					
pH (S.U.) Average Monthly	7.00						6.78					
CBOD5 (mg/L) Average Monthly	4.90						5.0					
TSS (mg/L) Average Monthly	5.0						4.0					
Oil and Grease (mg/L) Average Monthly	3.20						12.4					
Total Aluminum (mg/L) Average Monthly	0.05						.05					
Total Iron (mg/L) Average Monthly	1.46						0.76					
Total Manganese (mg/L) Average Monthly	0.72						0.60					

DMR Data for Outfall 024 (from July 1, 2013 to June 30, 2014)

Parameter	Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14
No discharge in past year.												

DMR Data for Outfall 025 (from July 1, 2013 to June 30, 2014)

Parameter	Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14
No discharge in past year.												

Development of Effluent Limitations

Outfall No. 003 **Design Flow (MGD)** 0.000000
Latitude 41° 0’ 30.06” **Longitude** 79° 43’ 6.70”
Wastewater Description: Stormwater runoff from wastewater treatment area, tank areas, roadways, industrial buildings, and loading/unloading areas

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Oil & Grease	15	Average Monthly		25 Pa. Code 95.2(2)
Oil & Grease	30	IMAX		25 Pa. Code 95.2(2)

Comments: This outfall utilizes an oil/water separator

Best Professional Judgment (BPJ) Limitations

Comments: Total aluminum, total manganese, and total iron monitoring in place due to being parameters of concern in TMDL. $CBOD_5$, and TSS monitoring is based on historical data. pH is recommended by the Department for all stormwater outfalls associated with industrial activity.

Additional Considerations

Development of Effluent Limitations

Outfall No. 007 **Design Flow (MGD)** 0.000000
Latitude 41° 0’ 35.60” **Longitude** 79° 43’ 2.57”
Wastewater Description: Stormwater runoff from tank areas, roadways, and industrial buildings (wastewater treatment plant oil separator).

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Oil & Grease	15	Average Monthly		25 Pa. Code 95.2(2)
Oil & Grease	30	IMAX		25 Pa. Code 95.2(2)

Comments: This outfall utilizes an oil/water separator

Best Professional Judgment (BPJ) Limitations

Comments: Total aluminum, total manganese, and total iron monitoring in place due to being parameters of concern in TMDL. Total Barium, $CBOD_5$, and TSS monitoring is based on historical data. pH is recommended by the Department for all stormwater outfalls associated with industrial activity.

Additional Considerations

Development of Effluent Limitations

Outfall No. 010 **Design Flow (MGD)** 0.479
Latitude 41° 0’ 35.05” **Longitude** 79° 43’ 2.68”
Wastewater Description: Specialty white oil, petroleum sulfonate (barium sulfonate conversion, calcium sulfonate conversion), wax and petroleum manufacturing, leachate, laboratory waste, sanitary waste, boiler blowdown, and stormwater

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Fecal Coliform (5/01 – 9/30)	200/100 ml	Geo Mean		25 Pa. code 93.7
Fecal Coliform (10/01 – 4/30)	200/100 ml	Geo Mean		25 Pa. code 93.7
Oil & Grease	15	Average Monthly		25 Pa. Code 95.2(2)
Oil & Grease	30	IMAX		25 Pa. Code 95.2(2)
pH	6.0 - 9.0 S.U.	Minimum-Maximum		25 Pa. code 93.7

Comments: There are no applicable ELGs

Water Quality-Based Limitations

A “Reasonable Potential Analysis” (Attachment A) determined the following parameters were candidates for limitations: Total Phenols (phenolics)

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Temperature (ºF) Jan 1-31	75	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Feb 1-29	75	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Mar 1-31	81	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Apr 1-15	83	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Apr 16-30	97	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) May 1-15	89	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) May 16-31	108	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Jun 1-15	104	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Jun 16-30	106	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Jul 1-31	98	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Aug 1-31	94	Average Daily	Thermal Discharge Analysis Spreadsheet

Temperature (ºF) Sep 1-15	95	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Sep 16-30	86	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Oct 1-15	84	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Oct 16-31	80	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Nov 1-15	80	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Nov 16-30	75	Average Daily	Thermal Discharge Analysis Spreadsheet
Temperature (ºF) Dec 1-31	77	Average Daily	Thermal Discharge Analysis Spreadsheet

Comments: The previous permit contained a final water quality-based effluent limit for total barium (3.4 mg/l & 11.7 lbs/day avg monthly). Barium data from this permit renewal application was used in a new reasonable potential analysis; it did not demonstrate a reasonable potential for a WQ criteria violation (see Attachment A). The effluent concentrations are much smaller than the calculated WQBEL.

Despite no reasonable potential, the anti-backsliding provisions from state & federal regulations still apply to the existing WQBEL. That is, the only way the existing limit can be removed or relaxed in the permit renewal, is if one or more of the exceptions to anti-backsliding exist. Section 402(o)(2) of the CWA allows backsliding where "there have been material and substantial alterations or additions to the permitted facility that justify the relaxation." The company reports barium concentrations in the effluent have dwindled over many years due to a significant reduction in the production of barium sulfonate and improved housekeeping strategies. Barium sulfonate used to be the main product produced at Sonneborn, used primarily as an additive in petroleum fuels and the tool and die industries. However, it has been replaced more and more with synthetic materials and accounts for only a small amount of the total plant production presently. A significant production decrease of the product containing barium can be construed a "material and substantial alteration to the permitted facility". Therefore, an exception to the backsliding rule exists, that can be used as a legal basis to justify removal of the total barium limit from the renewed permit.

WQM 7.0 modeling indicated less stringent limits for $CBOD_5$, ammonia nitrogen and dissolved oxygen. Current limits will remain due to anti-backsliding provisions (no exceptions to backsliding exist).

Best Professional Judgment (BPJ) Limitations

Comments: effluent limitations for TSS and manganese are retaining existing limits from the previous permit. Mass and concentration loading limitations are in place for total aluminum, total iron, and total manganese based on assigned Waste Load Allocations (WLAs) in the SBBC AMD Watershed TMDL. Monitoring for TDS, chloride, bromide, and sulfate are in place in accordance with the January 23, 2014 email regarding high TDS wastewaters (attached).

Chemical Additives

There were 18 chemical additives reported in the renewal application. All of these additives were previously approved for use at the stated usage rates so no further review was done, per the Department's new Chemical Additives SOP. All parameter except Chemtreat BL-1302 are on the Department's approved list, since it is used for pH adjustment, which is not required to be reported. The new chemical additive special condition will be added to the renewed permit, requiring the permittee to follow the new process for approval of new additives or increase dosage of existing chemicals.

Additional Considerations

Test results for requested additional sampling at Outfall 010 for resorcinol and the three sulfonic acids were evaluated using the Toxic Screening Analysis spreadsheet and no reasonable potential was found (all results significantly less than criteria). No monitoring or limits are needed in the renewed permit for these parameters.

Development of Effluent Limitations

Outfall No. 021 **Design Flow (MGD)** 0.000000
Latitude 41° 0’ 49.53” **Longitude** 79° 43’ 9.38”
Wastewater Description: Stormwater runoff from tank areas, roadways, and industrial buildings (pipe still oil separator).

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Oil & Grease	15	Average Monthly		25 Pa. Code 95.2(2)
Oil & Grease	30	IMAX		25 Pa. Code 95.2(2)

Comments: This outfall utilizes an oil/water separator

Best Professional Judgment (BPJ) Limitations

Comments: Total aluminum, total manganese, and total iron monitoring in place due to being parameters of concern in TMDL. $CBOD_5$, and TSS monitoring is based on historical data. pH is recommended by the Department for all stormwater outfalls associated with industrial activity.

Additional Considerations

Development of Effluent Limitations

Outfall No. 022 **Design Flow (MGD)** 0.000000
Latitude 41° 0’ 52.86” **Longitude** 79° 43’ 5.05”
Wastewater Description: Stormwater runoff from tank areas, roadways, and industrial buildings (oil/water separator).

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Oil & Grease	15	Average Monthly		25 Pa. Code 95.2(2)
Oil & Grease	30	IMAX		25 Pa. Code 95.2(2)

Comments: This outfall utilizes an oil/water separator

Best Professional Judgment (BPJ) Limitations

Comments: Total aluminum, total manganese, and total iron monitoring in place due to being parameters of concern in TMDL. $CBOD_5$, and TSS monitoring is based on historical data. pH is recommended by the Department for all stormwater outfalls associated with industrial activity.

Additional Considerations

Development of Effluent Limitations

Outfall No. 023 **Design Flow (MGD)** 0.000000
Latitude 41° 0’ 49.68” **Longitude** 79° 43’ 6.72”
Wastewater Description: Stormwater runoff from access roads, shipping building, and loading/unloading area (oil/water separator).

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Oil & Grease	15	Average Monthly		25 Pa. Code 95.2(2)
Oil & Grease	30	IMAX		25 Pa. Code 95.2(2)

Comments: This outfall utilizes an oil/water separator

Best Professional Judgment (BPJ) Limitations

Comments: Total aluminum, total manganese, and total iron monitoring in place due to being parameters of concern in TMDL. $CBOD_5$, and TSS monitoring is based on historical data. pH is recommended by the Department for all stormwater outfalls associated with industrial activity.

Additional Considerations

Development of Effluent Limitations

Outfall No.	024	**Design Flow (MGD)**	0.000000
Latitude	41° 0’ 51.42”	**Longitude**	79° 43’ 5.54”

Wastewater Description: Stormwater runoff

Technology-Based Limitations

Comments: This outfall does not utilize an oil/water separator

Best Professional Judgment (BPJ) Limitations

Comments: Total aluminum, total manganese, and total iron monitoring in place due to being parameters of concern in TMDL. $CBOD_5$, oil and grease, and TSS monitoring is based on historical data. pH is recommended by the Department for all stormwater outfalls associated with industrial activity.

Additional Considerations

Development of Effluent Limitations

Outfall No. 025 **Design Flow (MGD)** 0.000000
Latitude 41° 0’ 53.98” **Longitude** 79° 43’ 5.36”
Wastewater Description: Stormwater runoff

Technology-Based Limitations

Comments: This outfall does not utilize an oil/water separator

Best Professional Judgment (BPJ) Limitations

Comments: Total aluminum, total manganese, and total iron monitoring in place due to being parameters of concern in TMDL. $CBOD_5$, oil and grease, and TSS monitoring is based on historical data. pH is recommended by the Department for all stormwater outfalls associated with industrial activity.

Additional Considerations

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001) and/or BPJ.

Outfall 003, Effective Period: Permit Effective Date through Permit Expiration Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Annual Average		Minimum	Annual Average		Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/year	Estimate
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Suspended Solids	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	15	XXX	30	1/year	Grab
Total Aluminum	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 003 prior to discharge to South Branch Bear Creek (SBBC).

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001) and/or BPJ.

Outfall 007, Effective Period: Permit Effective Date through Permit Expiration Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly		Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/6 months	Estimate
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	15	XXX	30	1/6 months	Grab
Total Aluminum	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Total Barium	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Total Manganese	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab

Compliance Sampling Location: Outfall 007 at the discharge from the wastewater treatment plant oil separator and prior to discharge to SBBC.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001) and/or BPJ.

Outfall 010, Effective Period: Permit Effective Date through Permit Expiration Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Daily Average	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5	XXX	XXX	XXX	1/day	Grab
Temperature (ºF) Jan 1-31	XXX	XXX	XXX	75	XXX	XXX	1/day	I-S
Temperature (ºF) Feb 1-29	XXX	XXX	XXX	75	XXX	XXX	1/day	I-S
Temperature (ºF) Mar 1-31	XXX	XXX	XXX	81	XXX	XXX	1/day	I-S
Temperature (ºF) Apr 1-15	XXX	XXX	XXX	83	XXX	XXX	1/day	I-S
Temperature (ºF) Apr 16-30	XXX	XXX	XXX	97	XXX	XXX	1/day	I-S
Temperature (ºF) May 1-15	XXX	XXX	XXX	89	XXX	XXX	1/day	I-S

Outfall 010, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Daily Average	Daily Maximum	Instant. Maximum		
Temperature (ºF) May 16-31	XXX	XXX	XXX	108	XXX	XXX	1/day	I-S
Temperature (ºF) Jun 1-15	XXX	XXX	XXX	104	XXX	XXX	1/day	I-S
Temperature (ºF) Jun 16-30	XXX	XXX	XXX	106	XXX	XXX	1/week	I-S
Temperature (ºF) Jul 1-31	XXX	XXX	XXX	98	XXX	XXX	1/day	I-S
Temperature (ºF) Aug 1-31	XXX	XXX	XXX	94	XXX	XXX	1/day	I-S
Temperature (ºF) Sep 1-15	XXX	XXX	XXX	95	XXX	XXX	1/day	I-S
Temperature (ºF) Sep 16-30	XXX	XXX	XXX	86	XXX	XXX	1/day	I-S
Temperature (ºF) Oct 1-15	XXX	XXX	XXX	84	XXX	XXX	1/day	I-S
Temperature (ºF) Oct 16-31	XXX	XXX	XXX	80	XXX	XXX	1/day	I-S
Temperature (ºF) Nov 1-15	XXX	XXX	XXX	80	XXX	XXX	1/day	I-S
Temperature (ºF) Nov 16-30	XXX	XXX	XXX	75	XXX	XXX	1/day	I-S

Outfall 010, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Daily Average	Daily Maximum	Instant. Maximum		
Temperature (ºF) Dec 1-31	XXX	XXX	XXX	77	XXX	XXX	1/day	I-S
CBOD5 May 1 - Oct 31	46	91	XXX	13 Avg Mo	26	32	1/week	24-Hr Composite
CBOD5 Nov 1 - Apr 30	91	182	XXX	26 Avg Mo	52	65	1/week	24-Hr Composite
Total Suspended Solids	175	350	XXX	50 Avg Mo	150	150	1/week	24-Hr Composite
Total Dissolved Solids	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Oil and Grease	52	105	XXX	15 Avg Mo	30	30	1/week	3 Grabs/24 Hours
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	XXX	1/week	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	XXX	1/week	Grab
Ammonia-Nitrogen May 1 - Oct 31	4.6	9.1	XXX	1.3 Avg Mo	2.6	3.25	1/week	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	13.7	27.3	XXX	3.9 Avg Mo	7.8	9.75	1/week	24-Hr Composite
Total Aluminum	2.3	4.6	XXX	0.58 Avg Mo	1.16	XXX	1/month	24-Hr Composite

Outfall 010, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Daily Average	Daily Maximum	Instant. Maximum		
Total Iron	5.2	10.3	XXX	1.3 Avg Mo	2.6	XXX	1/month	24-Hr Composite
Total Manganese	4.0	8.0	XXX	1.0 Avg Mo	2.0	2.5	1/month	24-Hr Composite
Sulfate	Report Annual Avg	XXX	XXX	Report Annual Avg	XXX	XXX	1/year	24-Hr Composite
Chloride	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Bromide	Report Annual Avg	XXX	XXX	Report Annual Avg	XXX	XXX	1/year	24-Hr Composite

Compliance Sampling Location: Outfall 010 at the discharge from the treatment facilities and prior to discharge to SBBC.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001) and/or BPJ.

Outfall 021, Effective Period: Permit Effective Date through Permit Expiration Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly		Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/6 months	Estimate
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	15	XXX	30	1/6 months	Grab
Total Aluminum	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Total Manganese	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab

Compliance Sampling Location: Outfall 021 at the discharge from the pipe still oil separator and prior to discharge to SBBC.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001) and/or BPJ.

Outfall 022, Effective Period: Permit Effective Date through Permit Expiration Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Annual Average		Minimum	Annual Average		Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/year	Estimate
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Suspended Solids	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	15	XXX	30	1/year	Grab
Total Aluminum	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 022 at the discharge from the old wax cake oil separator and prior to discharge to SBBC.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001) and/or BPJ.

Outfall 023, Effective Period: Permit Effective Date through Permit Expiration Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly		Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/6 months	Estimate
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	15	XXX	30	1/6 months	Grab
Total Aluminum	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Total Manganese	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab

Compliance Sampling Location: Outfall 023 after the oil/water separator and prior to discharge to SBBC.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001) and/or BPJ.

Outfall 024, Effective Period: Permit Effective Date through Permit Expiration Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Annual Average		Minimum	Annual Average		Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/year	Estimate
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Suspended Solids	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Aluminum	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 024 prior to discharge to SBBC.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001) and/or BPJ.

Outfall 025, Effective Period: Permit Effective Date through Permit Expiration Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Annual Average		Minimum	Annual Average		Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/year	Estimate
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Suspended Solids	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Aluminum	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 025 prior to discharge to SBBC.

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **A**)
☒	PENTOXSD for Windows Model (see Attachment **A**)
☐	TRC Model Spreadsheet (see Attachment)
☒	Temperature Model Spreadsheet (see Attachment **A**)
☒	Toxics Screening Analysis Spreadsheet (see Attachment **A**)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☒	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: Chemical Additives; Establishing Effluent Limitations for Individual Industrial Permits
☐	Other: